

2.0 ALTERNATIVES ANALYSIS

2.1 Introduction

Under Chapter 310 (Wetlands and Waterbodies Protection Rules), pursuant to the Maine Natural Resources Protection Act (NRPA), as well as 40 C.F.R. § 230.10(a) (the 404(b)(1) Guidelines), pursuant to Section 404 of the Federal Clean Water Act, a permit applicant must document that a proposed project will avoid and minimize impacts to protected natural resources to the maximum extent practicable. Under NRPA, the applicant must demonstrate that there is no “practicable alternative to the activity that would be less damaging to the environment (DEP Reg. 310.5(A)). A project will not be permitted if there are practicable alternatives that would meet the project purpose and have less environmental impact. As defined by Chapter 310 of the DEP’s rules, “practicable” means “[a]vailable and feasible considering cost, existing technology and logistics based on the overall purpose of the project” (06-096 CMR § 310(3)(R)). Similarly, pursuant to the 404(b)(1) Guidelines, “[a]n alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes” (40 C.F.R. § 230.10(a)(2)).

The discussion included in this section of the NRPA application describes the process by which alternatives were developed and evaluated to identify a technically and economically sound solution that avoids and minimizes environmental impacts to achieve the least environmentally damaging practicable alternative. Ownership, landscape, location, design constraints on the transmission system, cost and potential environmental impacts of alternatives are compared against the proposed route.

2.2 NECEC Purpose and Need

The purpose of the NECEC Project is to deliver up to 1,200 MW of Clean Energy Generation from Québec to the New England Control Area¹ via a High Voltage Direct Current (HVDC) transmission line, at the lowest cost to ratepayers. This Project is proposed in response to the Request for Proposals for Long-Term Contracts for Clean Energy Projects dated March 31, 2017 (RFP) issued by the electric distribution companies of the Commonwealth of Massachusetts² and the Massachusetts Department of Energy Resources. However, if the NECEC Project is not awarded through this RFP, the Project will still

¹ The New England Control Area includes the transmission system administered by ISO-New England, the regional transmission organization (RTO), located in Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont, but does not include the transmission system in northern Maine (i.e., Aroostook County and parts of Penobscot and Washington counties).

² National Grid, NStar Electric d/b/a Eversource Energy, Fitchburg Gas & Electric Light Company d/b/a Unitil, and Western Massachusetts Electric Company d/b/a Eversource Energy.

fulfill the purpose and need of delivering renewable energy from Canada to New England, which has a continuing need for such power.

The NECEC project is expected to reduce regional CO₂ (greenhouse gas) emissions by over one million metric tons per year in Massachusetts, which is a direct benefit to neighboring states, including Maine. This amount would help achieve the stated goals of the Regional Greenhouse Gas Initiative (RGGI) by reducing the total amount of CO₂ emissions from the power sector of the six New England states, and Delaware, Maryland, and New York. The NECEC's ability to deliver reliable, renewably-generated electricity from Québec will help alleviate the need to build new non-renewable generation plants, and may allow retirement of older, less efficient fossil fueled power plants.

2.3 NECEC Alternatives

The alternative routes considered in this analysis are limited to the HVDC line component, from the Canadian border to the interconnection point with the grid at Larrabee Road Substation (Segments 1, 2 and 3), and associated substation upgrades; with all other components (i.e., Section 62/64 115kV rebuilds (Segment 4) and the new Section 3027 345kV line (Segment 5)) assumed to remain as proposed in all three scenarios. These latter line sections are being proposed in existing CMP corridors and, as such, the alternatives to these line sections would be to site these sections in new corridors, which would not meet the intended objectives of the least environmental impact on the environment. Thus, route alternatives for these project components are not discussed in detail in this narrative.

2.3.1 No-Action Alternative

Not constructing the NECEC project is the no-action alternative. The no-action alternative, however, would not meet the NECEC Project's purpose of allowing CMP to deliver 1,200 MW of the clean energy generation from Quebec to the New England Control Area at the lowest cost to ratepayers. In addition, even if a non-CMP project could be permitted elsewhere and could economically deliver 1,200 MW of clean energy generation from Quebec to the New England Control Area, such a project would not meet CMP's need to deliver that energy, and such a project would have unknown environmental impacts.

Further, the no-action alternative, if no alternative projects are built, would not reduce greenhouse gas emissions, would not reduce the wholesale cost of electricity for the benefit of retail customers across the region, and would not enhance electric reliability, particularly in winter months when natural gas supply and transfer constraints have occurred in recent years.

Thus, the no action alternative would not meet the project purpose and need.

2.3.2 Transmission Alternatives

The three HVDC transmission line routes, which have been considered as part of this analysis, would all meet the purpose and need to deliver clean energy generation from Québec to the New England Control Area. However, as discussed below, the two potential alternatives would result in more environmental impact than the proposed route for the NECEC corridor, and are not practicable.

2.3.2.1 Criteria for Assessment of Route Alternatives

The HVDC transmission line route alternatives were first identified through a geospatial desktop analysis, utilizing publicly available Geographic Information System (GIS) data. Alternatives were then evaluated and compared based on several parameters (points of comparison). CMP quantified and evaluated the following comparison criteria, listed in order of generally decreasing priority with respect to transmission line route selection:

- Conserved Lands
- Undeveloped Right of Way
- Clearing
- Stream Crossings
- Transmission Line Length
- National Wetlands Inventory (NWI) Mapped Wetlands
- Deer Wintering Areas
- Inland Waterfowl and Wading Bird Habitat
- Public Water Supplies
- Significant Sand and Gravel Aquifers
- Parcel Count Total

Each of these parameters is described in more detail below.

2.3.2.1.1 Conserved Lands

CMP's analysis identified the number of distinct parcels in federal, state, municipal, or non-profit ownership that would be crossed, some of which may be subject to conservation-related land use restrictions, and the acreage of conserved lands directly impacted (i.e., acreage cleared or otherwise altered) by the NECEC. Conserved lands include (i) parcels whose rights are partially or entirely owned or controlled by the National Park Service (NPS) (i.e., the Appalachian Trail, for which CMP granted NPS an easement) and the Maine Bureau of Parks and Lands and (ii) lands subject to conservation

easements that restrict development or other alteration of the land. These lands are often of high ecological, recreational, and/or aesthetic value. To preserve these values, CMP considered and favored transmission line routes that minimized crossings of conserved lands.

2.3.2.1.2 Undeveloped Right of Way

CMP's analysis identified the total length, in miles, of previously-undeveloped transmission line corridor to be developed and considered. To minimize wildlife habitat conversion, loss, or fragmentation, the analysis favored transmission line routes that minimized previously undeveloped land requiring clearing and development as a transmission line corridor.

2.3.2.1.3 Clearing

CMP's analysis identified the acreage of tree clearing required within the transmission line corridor and considered and favored transmission line routes that minimized tree clearing, to minimize habitat conversion-related impacts.

2.3.2.1.4 Stream Crossings

CMP's analysis identified the number of mapped features listed in the USGS - National Hydrography Dataset (USGS NHD) that would be crossed by the transmission line. CMP considered and favored transmission line routes that minimized stream crossings, in order to minimize unavoidable temporary (e.g., construction mat crossings) and permanent (e.g., increased insolation) impacts to these resources.

2.3.2.1.5 Transmission Line Length

CMP's analysis identified the total length, in miles, of new transmission line required and CMP considered and favored transmission line routes that minimized total transmission line length in order to reduce overall environmental impacts.

2.3.2.1.6 NWI Mapped Wetlands

CMP's analysis identified wetlands and water bodies (generally one acre and larger), listed in the National Wetlands Inventory (NWI) maps developed by the United States Fish and Wildlife Service (USFWS), which would be crossed by the transmission line. CMP considered and favored transmission line routes that minimized crossings of wetlands and water bodies, in order to minimize unavoidable temporary (construction mat crossings) and permanent (habitat conversion, filling) impacts to these resources.

2.3.2.1.7 Deer Wintering Areas

CMP's analysis identified the number of deer wintering areas listed by the Maine Office of GIS that are crossed by the transmission line, and the acreage of deer wintering areas directly impacted (i.e., acreage cleared or otherwise altered). CMP considered and favored transmission line routes that minimize intersections with DWAs, to minimize the need for clearing of woody vegetation within DWAs as a result of construction and maintenance activities.

2.3.2.1.8 Inland Waterfowl and Wading Bird Habitat

CMP's analysis identified the number of distinct waterfowl and wading bird habitats, and the total acreage listed by the Maine Office of GIS, crossed by the transmission line. Inland waterfowl and wading bird habitats include breeding, feeding, roosting, loafing, and migration stopover areas. Waterfowl habitats are divided behaviorally and seasonally into three categories: breeding habitats, migration and staging habitats, and wintering habitats (Maine Department of Inland Fisheries & Wildlife 2005b). CMP considered and favored transmission line routes that minimized intersections with IWWHs, in order to avoid and minimize clearing of vegetation within IWWHs required for transmission line construction and maintenance.

2.3.2.1.9 Public Water Supplies

CMP's analysis identified the number of public water supplies listed by the Maine Office of GIS and within 500 feet of the transmission line corridor. CMP considered and favored transmission line routes that minimized crossing of public water supplies in order to minimize the potential for any construction-related impacts to these resources.

2.3.2.1.10 Significant Sand and Gravel Aquifers

CMP's analysis identified the number of significant sand and gravel aquifers identified by the Maine Office of GIS that would be crossed by the transmission line. CMP considered and favored transmission line routes that minimized crossing of significant sand and gravel aquifers, which are, or may be, used as private or public water supplies, to minimize the potential for any construction-related impacts to these resources.

2.3.2.1.11 Parcel Count Total

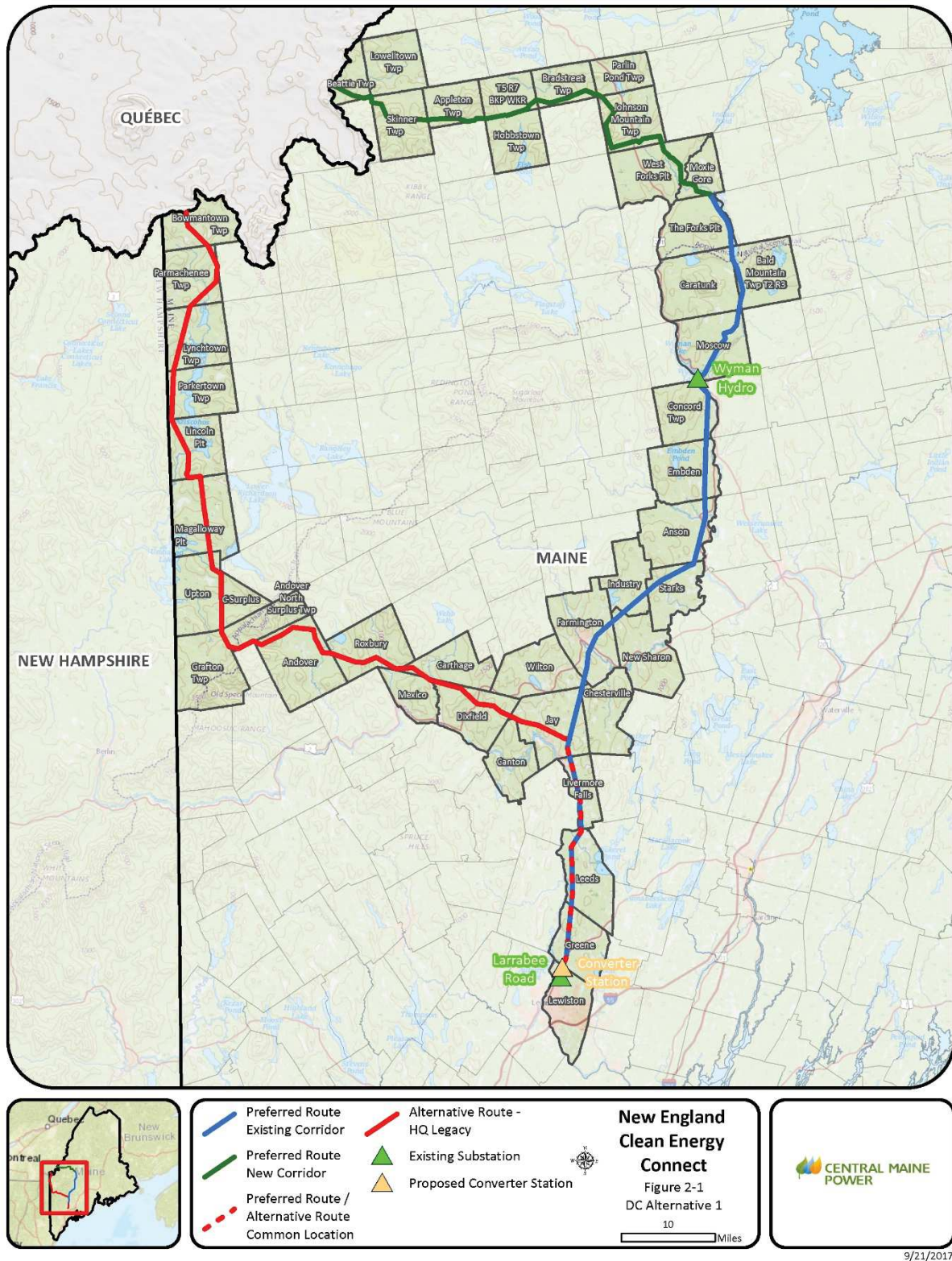
CMP's analysis identified the number of land parcels for which CMP would require the acquisition of title, right, or interest. CMP considered and favored transmission line routes with the highest likelihood of successful land rights acquisition, and utilized the number of parcels for which it would need title, right, or interest as one indicator of this.

2.3.2.2 HVDC Alternative 1

2.3.2.2.1 1980's Quebec Corridor Description

DC Alternative 1 (Alternative 1) is based on CMP's attempt to acquire and permit a transmission line project from Québec to the Lewiston, Maine area in the late 1980s. At that time, CMP had acquired title, right, or interest, primarily through real estate option agreements, on a significant portion of this corridor. However, the Maine Public Utilities Commission did not approve this project and these real estate option agreements have since expired. The Alternative 1 corridor would extend from the Canadian border in western Maine approximately 119.3 miles to an interconnection point in Lewiston, Maine (see **Figure 2-1**). Alternative 1 would be located primarily in a new corridor and partially in undeveloped width in existing corridors.

Figure 2-1: HVDC Alternative 1



Alternative 1 begins in Bowmantown Township, Oxford County, Maine at a point on the Maine/Québec border about 0.75 mile east of the Maine/New Hampshire line. The corridor extends southerly through Bowmantown Township, Parmachenee Township, Lynchtown Township, Parkertown Township and Lincoln Plantation, all in Oxford County. The corridor is west of Parmachenee Lake and Aziscohos Lake. In Lincoln Plantation, the corridor crosses Route 16 approximately 0.75 mile west of the bridge across the Magalloway River and then crosses the Magalloway River. At the south line of Lincoln Plantation, the corridor turns east for about 1.25 miles and then south across Magalloway Plantation, Oxford County, following the west property boundary of an industrial forest landowner to the south line of Magalloway Plantation. The entire eight miles across Magalloway Plantation is now subject to a conservation easement held by the New England Forestry Foundation, so a realignment to cross other properties would be necessary in this area.

From Magalloway Plantation the corridor continues south across the Town of Upton, Oxford County, crossing the Rapid River about 0.5 mile south of the outlet of Pond-in-the-River. In the 1980s the land along the Rapid River was owned by an affiliate of CMP. That land and additional land on each side of the river is now controlled by the Rangeley Lakes Heritage Trust and the MDIFW and is subject to a conservation easement. Obtaining rights for a transmission line through this conservation easement is highly unlikely.

South of the Rapid River the corridor runs southeast to C Surplus Township, Oxford County, and then turns south following the west line of C Surplus Township to the southerly line of the township. C Surplus Township is now subject to a conservation easement held by the New England Forestry Foundation; therefore, the alignment would need to be moved to the east line of Upton Township. From C Surplus, the route follows the westerly line of Andover North Surplus or the east line of Grafton Township, both in Oxford County, for about two miles before turning east to the southerly line of Andover North Surplus and the west line of the Appalachian Trail Corridor. No records could be located to determine how CMP planned to cross the Appalachian Trail corridor on the circa 1985 project.

From the easterly line of the Appalachian Trail corridor the Alternative 1 corridor follows the southerly line of Andover North Surplus for about a mile before turning east and crossing into the Town of Andover, Oxford County where the corridor roughly follows the north and then east town lines before crossing into the town of Roxbury, Oxford County. The corridor crosses Route 120, the Swift River and Route 17 in the southeast part of the town and then exits Oxford County, entering Franklin County for about three miles in the town of Carthage before reentering Oxford County on the north line of the town of Mexico. In less than 0.75 mile, the Alternative 1 corridor crosses the Webb River and into the Town of

Dixfield, Oxford County where the corridor continues southeasterly across Dixfield, crossing U.S. Route 2 before crossing the east line of the town into the Town of Jay, Franklin County. Continuing southeasterly across the town of Jay and the very northern tip of the Town of Canton, Oxford County, the corridor crosses Route 4 and then Route 133 before connecting with the Section 278 corridor about 2.25 miles north of the Livermore Falls Substation. From the point of intersection with Section 278 south to Larrabee Road Substation, a distance of approximately 26 miles, Alternative 1 is the same as the Preferred Alternative.

2.3.2.2.2 HVDC Alternative 1 Comparison

Table 2-1, below, compares the NECEC Preferred Alternative to Alternative 1.

Table 2-1: Comparison of NECEC Preferred Alternative to Alternative 1

Point of Comparison	Unit	Preferred Alternative	Alternative 1
Conserved lands	no./acres	6 parcels/42 acres	8 parcels/275.3 acres
Undeveloped ROW	miles	53.5	93.1
Clearing	acres	1,823	1,934
Parcel count total	no.	7	120
Stream crossings	no.	115	88
Transmission line length	miles	146.5	119.3
NWI mapped wetlands	no./acres	263 wetlands/76.3 acres	238 wetlands/118.3 acres
Deer wintering areas	no./acres	8 DWAs/44.3 acres	8 DWAs/71.3 acres
Inland waterfowl and wading bird habitat	no./acres	12 IWWH/22.7 acres	9 IWWH/23.1 acres
Public water supplies within 500 feet	no.	1	1
Significant sand and gravel aquifers	no.	12	7

Conserved Lands

The Preferred Alternative crosses fewer conserved land parcels, and significantly less conserved lands acreage than Alternative 1, indicating that the Preferred Alternative would cause less habitat fragmentation than Alternative 1.

A crossing of the Appalachian Trail would be required by both routes. An overhead crossing of the Appalachian Trail for Alternative 1 would require the acquisition of an easement and a 150-foot wide swath of tree clearing across the trail corridor where no transmission line corridor currently exists. In comparison, the Preferred Route crosses the Appalachian Trail in an existing transmission line corridor and is next to an existing gravel road. CMP owns the Appalachian Trail on Section 222. CMP acquired the rights in fee circa 1950. It later conveyed an easement to the NPS, but kept the fee ownership and specifically the right to construct overhead electric transmission and communication lines for the entire 300-foot wide corridor when the NPS purchased the trail corridor. CMP would only require an additional 75 feet of tree clearing for the installation of the overhead transmission line for the Preferred Alternative.

Undeveloped Right of Way

Alternative 1 would require 93.1 miles of new corridor, compared to 53.5 miles of new corridor for the Preferred Alternative, an increase in 39.6 miles of currently undeveloped ROW.

Clearing

Although Alternative 1 is shorter in overall length than the Preferred Route, Alternative 1 would require an additional 111 acres of tree clearing compared to the Preferred Alternative.

Parcel Count Total

The Alternative 1 corridor would require CMP to acquire title, right, or interest in 120 parcels of land. In contrast, the Preferred Alternative requires the acquisition of rights in only seven parcels. CMP has acquired rights for all seven parcels.

Stream Crossings

The USGS NHD identified more stream crossings along the Preferred Alternative than Alternative 1, likely a function of transmission line corridor length. CMP standard construction practice is to install temporary equipment spans over streams and to avoid all in-stream activities. Consequently, the primary potential impacts to stream habitat are sedimentation and insolation. CMP mitigates the potential for these impacts by installing erosion and sedimentation controls, by routine cleaning of temporary crossing (construction mats) spans, and by maintaining riparian buffers during operations and maintenance of the line. As a result, temporary and permanent impacts to streams on either route would be insignificant.

Transmission Line Length

The Alternative 1 transmission line corridor is 119.3 miles in length; about 27.2 miles shorter than the Preferred Alternative. Alternative 1, in comparison to the Preferred Alternative, would require 93.1 miles of new corridor, an increase in 39.6 miles of new corridor.

NWI Mapped Wetlands

A comparison of mapped NWI wetlands along Alternative 1 and the Preferred Alternative identified 25 more wetlands along the Preferred Route. However, construction in the Alternative 1 corridor would result in an additional 42 acres of wetland impact when compared to the Preferred Route. The primary impact to wetlands from construction of the project will be the conversion of forested wetland to early successional scrub-shrub and meadow cover types. As a result, other than a minor amount of permanent fill associated with structures placed in wetlands where no siting alternatives are available, the permanent loss of wetlands from construction of the project on either route is negligible.

Deer Wintering Areas

The Preferred Route would cross eight deer wintering areas (DWAs) and would require the conversion of 44.3 acres of DWA habitat. In comparison, Alternative 1 would also cross eight DWAs, but would require the conversion of 27 more acres of DWA habitat than the Preferred Route.

Inland Waterfowl and Wading Bird Habitat

The Preferred Alternative would cross 12 IWWHs and require the conversion of 22.7 acres of IWWH habitat, while Alternative 1 would cross nine IWWHs and would require the conversion of 23.1 acres of IWWH.

Public Water Supplies within 500 Feet

One public water supply is located within 500 feet of both the Preferred Alternative and Alternative 1.

Significant Sand and Gravel Aquifers

Impacts from the construction and operation of a transmission line are unlikely to impact aquifers due to the short duration of equipment operation and the implementation of environmental controls, and spill reporting and cleanup procedures utilized by CMP and its contractors during construction.

Preferred Alternative vs. Alternative 1 Summary

A comparison of the environmental resources traversed by both routes does not substantively differentiate the two routes in terms of overall number of resources impacted. However, when assessing the extent of impact, the conversion of habitat is much greater along the Alternative 1 route than the Preferred Route.

Alternative 1 transmission structures would be visible from Black Mountain Ski Area in the Town of Rumford, Maine, Rapid River in Upton, and Aziscohos Mountain in Lincoln Plantation as well as from the Appalachian Trail. The Preferred Route is comparatively advantageous in that it would cross the Appalachian Trail in a location with an existing overhead transmission line corridor.

Alternative 1 would require the acquisition of 120 parcels of private land in addition to rights needed to cross conservation lands. Additionally, 93.1 miles of Alternative 1 consists of a new corridor with no land rights under agreement, controlled or owned by CMP.

For these reasons, Alternative 1 is more environmentally damaging than the Preferred Route, and it is not a practicable alternative.

2.3.2.3 HVDC Alternative 2

2.3.2.3.1 Bigelow Corridor Description

DC Alternative 2 (Alternative 2) would extend from the Canadian border in western Maine approximately 138.5 miles to an interconnection point in Lewiston, Maine (see **Figure 2-2**). The line would be located partially in a new corridor and partially in undeveloped width in existing corridors.

The Alternative 2 corridor begins in western Maine in Beattie Township, Franklin County, Maine at a point on the Canadian border approximately 2.5 miles north of the southwest corner of the township. The alternative corridor extends southeast along the Preferred Alternative for approximately 7.75 miles across Beattie Township, the southwest corner of Lowelltown Township and southerly across Skinner Township to a point where the Preferred Alternative turns east. The Preferred Alternative corridor has been acquired, therefore no additional acquisition would be necessary in the first 7.75 miles of Alternative 2. Both routes require the acquisition by lease of the Lowelltown parcel from the Passamaquoddy Tribe.

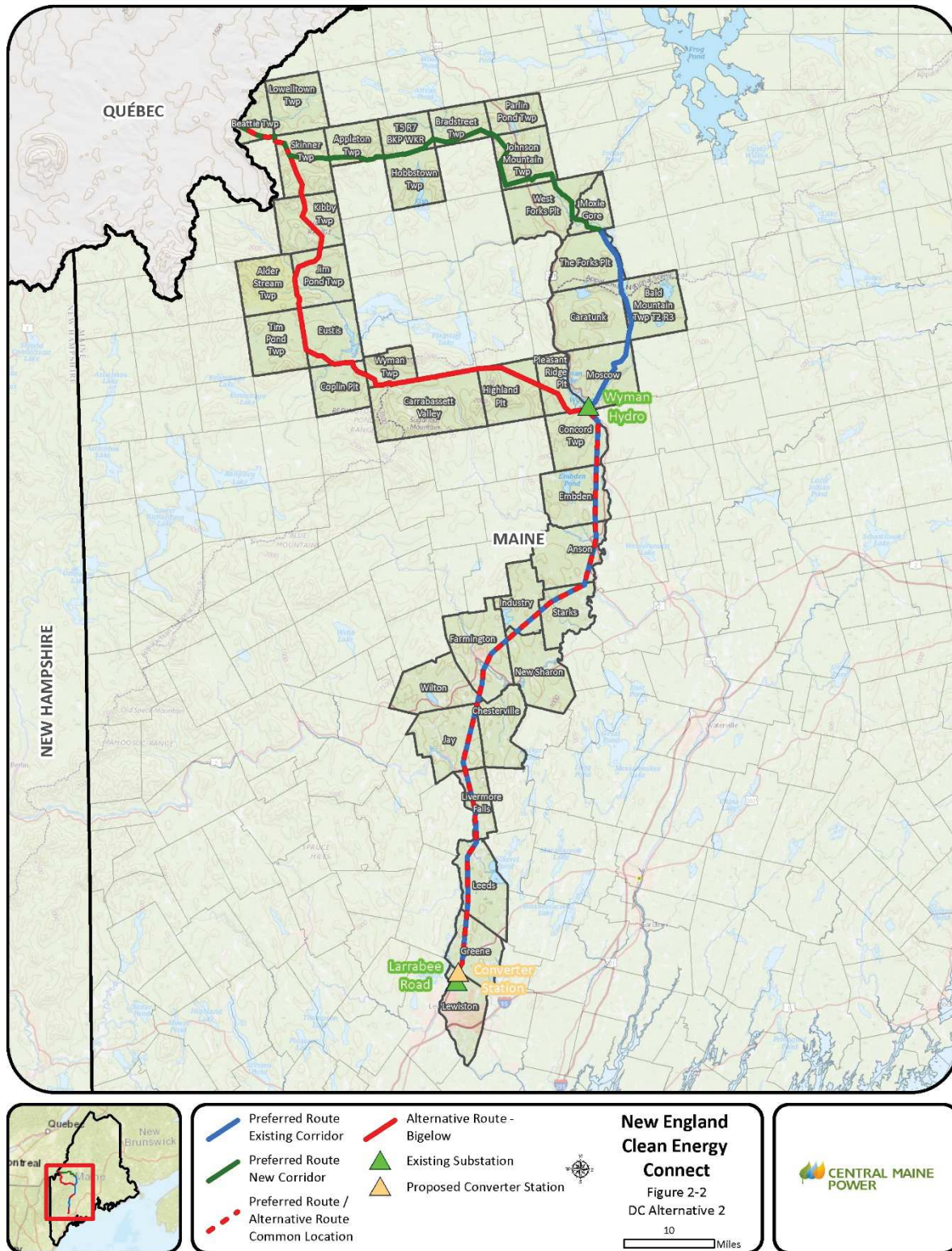
Alternative 2 continues southerly approximately 8.75 miles to a point in Kibby Township, Franklin County, where the corridor begins to parallel the Kibby Mountain Wind Farm 115kV generation lead line. Elevations range from 1,900 feet near the intersection with the generator lead to just under 2,700 feet. The Alternative 2 corridor parallels the generator lead south across Kibby Township, Jim Pond Township, the Town of Eustis, and Coplin Plantation, all in Franklin County. The 115kV generator lead from the Stratton Energy biomass plant begins to parallel the Kibby generator lead in Coplin Plantation and both lines continue to parallel the Alternative 2 corridor southeasterly across Coplin Plantation and Wyman Township to the Bigelow Substation located on the east side of Route 27 along the north line of the Town of Carrabassett Valley.

Alternative 2 parallels the generator lead for a total distance of approximately 27.5 miles. Elevation ranges from about 1,250 feet to about 1,900 feet on this portion of the alternative. The Alternative 2 corridor from the Preferred Alternative to Bigelow Substation would require the acquisition of a 150-foot wide corridor. This section of new corridor would be located parallel to, but would not overlap, the existing generator lead corridor. It is not possible to co-locate the Alternative 2 corridor and the Kibby generator lead corridor because of real estate constraints. Thus, development of Alternative 2 would result in a new full width corridor adjacent to the existing corridor in this location.

The surrounding land generally is industrial forest land typified by spruce-fir and northern hardwoods forest types that are owned and managed for timber production. Most of the area is undeveloped with only a few seasonal dwellings. Recreation is typically permitted on the industrial forest lands. The Village of Stratton is located about 0.25 miles east of the alternative corridor but the corridor does not impact any residential areas. There is one industrial wind farm located in Kibby Township, and both a biomass generation plant and a saw mill are located in Stratton.

The Alternative 2 corridor crosses Route 27 twice and Route 16 once. Generally, access would need to be obtained over private roads. The alternative corridor crosses the Appalachian Trail on the north side of the Wyman/Carrabassett Valley town line. Overhead rights were obtained from the U.S. Department of the Interior (DOI) for the Stratton Energy generator lead circa 1985. However, DOI refused to grant rights to cross the AT, either overhead or underground, for the Kibby Wind generator lead circa 2010 and the generator lead was placed underground in the Route 27 highway right of way. Obtaining a Special Use permit from the NPS to cross the Appalachian Trail corridor with an overhead line is highly unlikely. The cost and complexity of an underground crossing, whether buried roadside in the Route 27 right of way or placed underneath the Appalachian Trail corridor via directional bore, would pose a financial barrier and an engineering challenge.

Figure 2-2: HVDC Alternative 2



9/21/2017

Starting at the Bigelow Substation, the Alternative 2 corridor would be co-located for approximately 23.5 miles with CMP's Section 215 corridor, which crosses Carrabassett Valley, Franklin County, Highland Plantation and Pleasant Ridge Plantation, Somerset County. Elevation ranges from about 1,100 feet to about 1,900 feet for this portion of the alternative.

Section 215 is a 115kV radial line³ built on H-frame structures in a 150-foot wide corridor. For approximately 9.5 miles, the Section 215 corridor is located along the north line of Carrabassett Valley which is also the south line of the Bigelow Preserve, a large Maine-owned tract with strict land use restrictions designed to limit development. A one mile long portion of the Bigelow Preserve extends across the Section 215 corridor. Section 215 originates at Wyman Hydro and terminates at Bigelow substation.

Most of the eastern half of Carrabassett Valley is owned by the Penobscot Indian Nation. Most of the land in Highland Plantation and Pleasant Ridge Plantation is industrial forest land although there are smaller tracts of private forest ownership and some residential development along Rowe Pond Road in Pleasant Ridge, which is crossed twice by Section 215. The acquisition of an additional 75 feet of width would generally be necessary to co-locate with the Section 215 corridor. However, acquiring additional width through the Bigelow Preserve would be very difficult or impossible due to significant land use restrictions in the Preserve. Therefore, Alternative 2 would require that the DC line be double-circuited with Section 215, placed underground, or rerouted southerly around the Bigelow Preserve ownership. Given the probable need to cross the Appalachian Trail underground, the difficulty in taking radial line Section 215 out of service (i.e., there is no other CMP 115 kV line connected to Bigelow substation so the loss of Section 215 could jeopardize the entire load and generation serviced by this substation), and the expected visual impacts of Alternative 2, CMP anticipates that regulators would require the Alternative 2 line to be installed underground from the north side of the Appalachian Trail corridor to the Highland Plantation town line, a distance of approximately ten miles. Because underground transmission line construction costs can be approximately 4-10 times that of overhead construction, this represents a significant financial barrier. Conversely, the Preferred Alternative would cross the Appalachian Trail in an existing corridor owned by CMP.

³ A radial transmission line is a transmission line that is supplied from one direction only and terminates without connecting with another transmission line.

A new corridor approximately 0.75-mile long will be necessary to connect the Section 215 corridor in southeastern Pleasant Ridge Plantation and the Section 63 corridor in northeastern Concord Township. This segment of the Alternative 2 corridor would need to be 150 feet wide.

From the point of intersection with the Section 63 corridor, which is approximately 0.75 mile south of the Wyman Dam, Alternative 2 would follow the preferred route to Larrabee Road Substation in Lewiston.

2.3.2.3.2 Alternative 2 Comparison

Table 2-2, below, compares the NECEC Preferred Alternative to Alternative 2.

Table 2-2: Comparison of NECEC Preferred Alternative to Alternative 2

Point of Comparison	Unit	Preferred Alternative	Alternative 2
Conserved lands	no./acres	6 parcels/42 acres	9 parcels/53.2 acres
Undeveloped ROW	miles	53.5	17.3
Clearing	acres	1,823	1,670
Parcel count total	no.	7	34
Stream crossings	no.	115	123
Transmission line length	miles	146.5	138.5
NWI mapped wetlands	no./acres	263 wetlands/ 76.3 acres	283 wetlands/ 113.3 acres
Deer wintering areas	no./acres	8 DWAs/44.3 acres	8 DWAs/44 acres
Inland waterfowl and wading bird habitat	no./acres	12 IWWH/22.7 acres	12 IWWH/16.5 acres
Public water supplies within 500 feet	no.	1	1
Significant sand and gravel aquifers	no.	12	10

Conserved Lands

The Preferred Alternative and Alternative Route 2 both cross conserved land parcels. However, Alternative 2 would traverse three additional conserved parcels, resulting in 11.2 acres of additional impact to conserved lands compared to the Preferred Route. Alternative 2 would require crossing the Appalachian Trail on Route 27 in the town of Wyman. An overhead or direct bore underground crossing of the Appalachian Trail on Alternative 2 would require the acquisition of an easement from the NPS and an overhead crossing would require a 150-foot wide swath of tree clearing across the trail corridor where no transmission line corridor currently exists. Otherwise, underground installation of the DC transmission line would be required within the ROW of State Highway 27. Both options are prohibitively expensive.

In comparison, the Preferred Alternative crosses the Appalachian Trail corridor within an existing transmission line corridor and is adjacent to an existing gravel road. CMP owns the land where the Appalachian Trail is located on Section 222. CMP acquired the rights in fee circa 1950. It later conveyed an easement to the NPS, but retained fee ownership, and specifically retained the right to construct overhead electric and communication transmission lines for the entire 300-foot wide corridor when the NPS purchased the trail corridor easement. CMP would only require an additional 75 feet of tree clearing for the installation of the overhead transmission line for the Preferred Alternative.

Undeveloped Right of Way

The Preferred Alternative would require 53.5 miles of currently undeveloped right of way to be developed, compared to 17.3 miles of currently undeveloped right of way required for Alternative 2.

Clearing

The Preferred Alternative would require clearing 1,823 acres, compared to Alternative 2 which would require clearing 1,670 acres.

Parcel Count Total

The Alternative 2 corridor would require CMP to acquire title, right, or interest in 34 parcels of land. In contrast, the Preferred Route requires the acquisition of rights in only seven parcels. CMP has acquired the rights for all seven parcels.

Stream Crossings

The Preferred Route would cross 115 streams, while Alternative 2 would cross 123 streams. CMP standard construction practice is to install temporary equipment spans over streams and to avoid all in-stream activities. Consequently, the primary potential impacts to stream habitat are sedimentation and insolation. CMP mitigates the potential for these impacts by installing erosion and sedimentation controls,

by routine cleaning of temporary crossing (construction mats) spans, and by maintaining riparian buffers. As a result, impacts to streams on either route would be insignificant.

Transmission Line Length

The Preferred Route transmission line corridor is 146.5 miles, whereas the Alternative 2 transmission line corridor is 138.5 miles.

NWI Mapped Wetlands

The Preferred Route crosses 263 wetlands and impacts 76.3 acres, whereas Alternative 2 crosses 283 wetlands and impacts 113.3 acres. The primary impact to wetlands from construction of the project will be the conversion of forested wetland to early successional scrub-shrub and meadow cover types. As a result, other than a minor amount of permanent fill associated with structures placed in wetlands where no siting alternatives are available, the permanent loss of wetlands from construction of the project on either the Preferred Route or Alternative 2 is negligible.

Deer Wintering Areas

Deer wintering areas crossed, and converted, are virtually identical between the Preferred Route and Alternative 2. There is no significant environmental advantage to either route with respect to DWAs.

Inland Waterfowl and Wading Bird Habitat

The Preferred Route crosses 12 IWWHs and would require conversion of 22.7 acres, while Alternative 2 crosses 12 IWWHs and would require conversion of 16.5 acres. There is no significant environmental advantage to either route with respect to IWWHs.

Public Water Supplies within 500 Feet

One public water supply is located within 500 feet of both routes. There is no significant environmental advantage to either route with respect to public water supplies.

Significant Sand and Gravel Aquifers

The Preferred Route crosses 12 significant sand and gravel aquifers, while Alternative 2 crosses 10 significant sand and gravel aquifers. Impacts from the construction and operation of a transmission line are unlikely to impact aquifers due to the short duration of equipment operation and the implementation of environmental controls, and the spill reporting and cleanup procedures utilized by CMP and its contractors during construction.

Preferred Alternative vs. Alternative 2 Summary

Alternative 2, while slightly shorter and containing less new corridor than the Preferred Route, has more wetland and stream crossings than the Preferred Alternative and would create more significant environmental impacts as well as severe land acquisition and social impact issues.

Approximately 34 parcels would need to be acquired, including rights across the Penobscot Indian Nation, the Bigelow Preserve and the Appalachian Trail corridor. Past attempts by others, including Highland Wind and Foster Mountain Wind (a/k/a West Hills Wind) to develop transmission and generation in this area have not been successful, due in part to local opposition; therefore, the acquisition of private land in these areas is expected to be difficult.

In addition, Alternative 2 transmission structures would likely be visible from points on the Appalachian Trail and other trails on the Bigelow Preserve and from the Sugarloaf Mountain Ski area. Based on recent National Park Service objections to the proposed overhead transmission line associated with the Kibby Mountain Wind generator lead, an overhead crossing near the Appalachian Trail on Route 27 in the town of Wyman would likely be opposed by the National Park Service and is therefore unlikely to be permissible.

For these reasons, Alternative 2 is more environmentally damaging than the Preferred Route, and is not a practicable alternative.

2.3.3 Alternative Locations to Merrill Road Converter Station

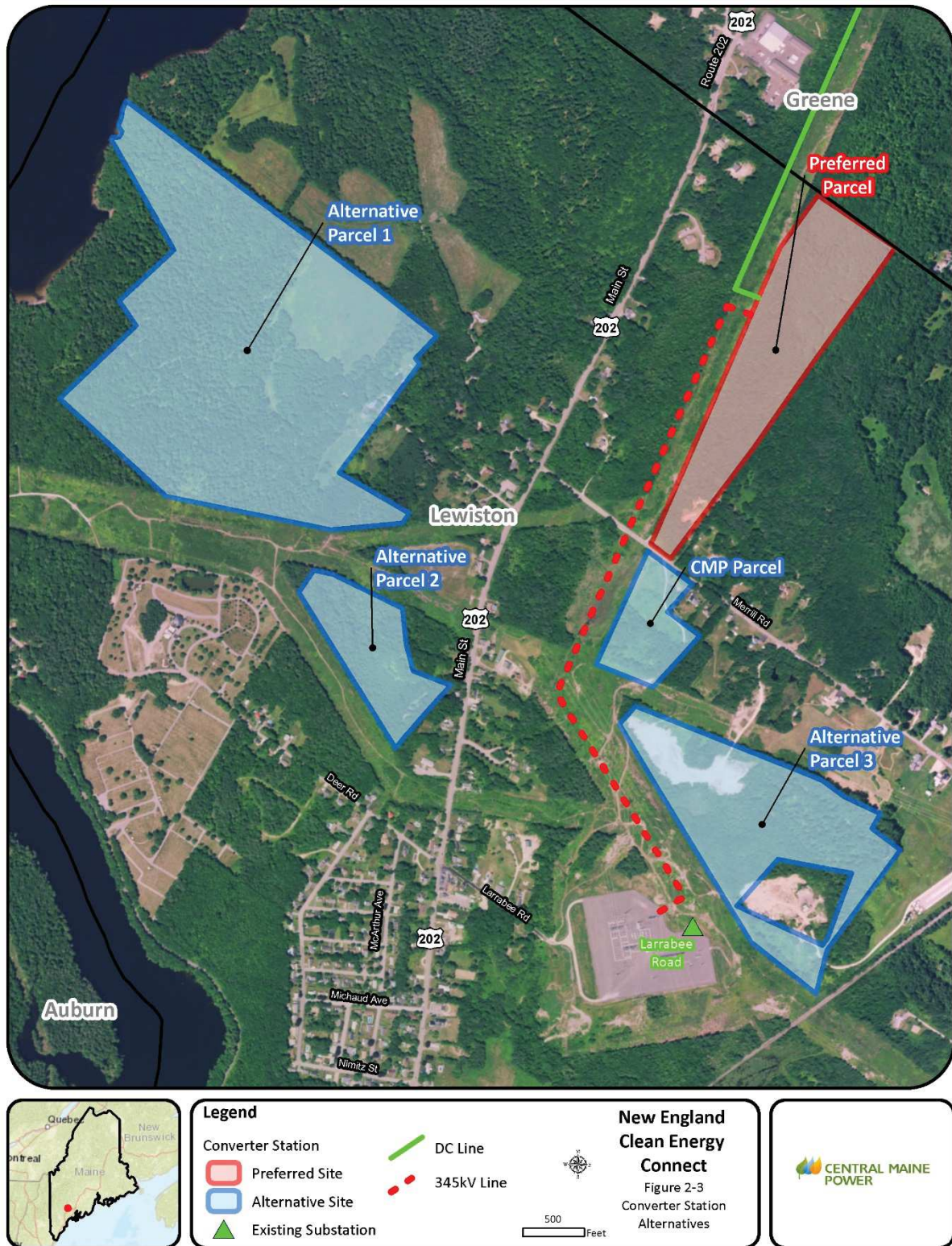
Several sites for the DC to AC converter station were identified and evaluated based on adequacy of land area suitable for the converter station siting, location along the preferred HVDC transmission route, proximity to the nearest substation capable of interconnection, and potential impacts to the environment and on surrounding land uses (see **Figure 2-3**).

CMP evaluated six sites (including the Larrabee Road Substation) as possible options for the converter station. The unimproved forested parcel owned by CMP, “CMP Parcel,” on the south side of Merrill Road and a forested parcel, “Alternative 2 Parcel,” were ruled out as not being large enough to accommodate the proposed facility. The Larrabee Road Substation was ruled out for this same reason. “Alternative Parcel 3,” on the south side of Merrill Road, north of the Larrabee Road Substation has sufficient land area, but the NRCS soil maps indicated ScA (Scantic silt loam, 0-3% slopes) and Pa (Peat and muck) soils throughout the lot. These soils are poorly drained or very poorly drained and therefore reflective of wetlands, and are therefore not preferred from an environmental impact and an engineering standpoint.

CMP identified two of the six properties as being most suitable: 1) the “Preferred Parcel” (the preferred site) located along the project corridor 0.5 mile north of Merrill Road in Lewiston; and 2) the “Alternative Parcel 1” situated along an adjacent transmission corridor (0.6 miles from the project corridor) located at the end of Taylor Hill Road in Lewiston. These two sites are approximately one mile from the Larrabee Road Substation in Lewiston. Both properties contain adequate land area, are located a suitable distance from residential structures, are bordered by significant vegetative buffers, and would allow for interconnection to the Larrabee Road Substation through existing ROWs. However, Alternative Parcel 2 would require the HVDC line to extend an additional 0.5 mile, including one HVDC line crossing of U.S. Route 202 and one crossing of U.S. Route 202 by the 345kV tie to the Larrabee Road Substation. Alternative Parcel 2 would also require an approximately one mile segment of transmission line Section 61 and Section 255 to be placed on double-circuit structures, which are not preferred for reliability reasons.

Both the preferred and alternative parcels contain wetlands, but based on existing natural resource data and NRCS soil survey maps, the location of wetlands on the Alternative Parcel 2 would not allow the converter station to be positioned immediately adjacent to the transmission line corridor without significant fill for both the converter station and the access road to the site. The preferred site is positioned directly along the project’s HVDC corridor. There is one mapped significant vernal pool (SVP) on the preferred site; however, the six-acre converter station will be sited in an upland area outside of the SVP depression. Impacts will occur to the critical terrestrial habitat adjacent to this pool, however, a significant amount of adjacent forestland will remain undeveloped in the immediate vicinity.

For these reasons, the alternative site on Alternative Parcel 2 is more environmentally damaging than the preferred Merrill Road Converter Station site on the Preferred Parcel, and is not practicable.

Figure 2-3: Merrill Road Converter Station Alternatives

2.3.4 Alternative Locations to the Fickett Road Substation

CMP Transmission Planning analyzed several locations across the CMP transmission system to identify the optimal location and size of the STATCOM units needed to maintain system voltage stability. The optimal design and location to ensure electrical performance and to maintain system voltage stability, and in order to minimize the size and number of the units required, was determined to be a 200 MVAR STATCOM site located at Fickett Road in Pownal, adjacent to the existing Surowiec Substation, as well as a 200 MVAR STATCOM at the existing Coopers Mill Substation.

The STATCOM at Coopers Mill Substation will be within the existing fence line, no alternatives were considered for this option as it meets the objective of avoiding or minimizing environmental impact.

The location of the STATCOM proposed at Fickett Road is electrically optimal to be located as close to Surowiec Substation as possible. The existing Surowiec Substation yard is not large enough to accommodate the new STATCOM, and site restrictions due to the location of Runaround Brook do not allow for an expansion of the yard. The parcel located north of the Surowiec Substation, bordered by Fickett and Allen Road is on existing CMP owned land, adjacent to an existing CMP transmission line corridor. The close proximity of the proposed substation to Surowiec Substation will minimize the length of overhead transmission line required to connect the two substation sites, thereby minimizing impacts compared to the STATCOM compared to it any alternative location farther from Surowiec Substation

2.4 Site Specific Design to Minimize Environmental Impacts

In addition to the comprehensive analysis of alternatives completed for the NECEC, the various segments of the route have been designed to include site-specific adjustments to utility structure locations, temporary access roads, and substation designs that avoid and minimize potential natural resource impacts to the greatest extent practicable. Each segment of the NECEC route was assessed using GIS datasets available from the Maine Office of GIS, Maine Department of Inland Fisheries & Wildlife (MDIFW), Maine Natural Areas Program (MNAP), and the National Wetland Inventory (NWI). These datasets included: rare, threatened, and endangered species; unique natural areas; significant wildlife habitat; wetlands designated in the NWI; public lands (e.g., state and local parks); and conservation land trust properties. Field surveys were completed during the 2015, 2016 and 2017 field seasons to identify new and verify previously mapped vernal pools, wetlands and rivers and streams. Desktop reviews of prehistoric and historic archaeological sites and historic architectural resources were conducted to locate potentially significant cultural resources. Visual analysis field surveys were conducted and photo simulations were created to study visual impacts. Findings of the field investigations specific to wetlands

and other protected natural resources are discussed in **Attachment 9.0** of this NRPA Application; findings specific to other topics are discussed in the Site Law Application.

After selecting the preferred NECEC route, CMP designed each transmission component to further avoid and minimize community, private property, and environmental impacts while maintaining a cost-effective and technically sound design in accordance with Chapter 310 and the 404(b)(1) Guidelines. These goals were achieved through two key design considerations. First, CMP attempted to site and design each NECEC transmission line segment within existing transmission corridors owned by CMP, although this was not practicable in all cases. Second, CMP established structure locations and temporary access roads that, to the extent practicable, avoided protected natural resources.

In some instances, construction within areas of mapped protected or sensitive species occurrences or plant communities cannot be avoided due to topography or safety concerns associated with existing infrastructure, however the proposed work will not necessarily adversely impact the species or identified resource. In some instances, rare plant or natural communities are enhanced by, or result from, conditions created and maintained within transmission line corridors. Furthermore, the species, plant community, or habitat mapped in the vicinity may not occur within the specific area of proposed construction, or may be absent at the time of construction. CMP has been in consultation with MNAP and MDIFW regarding potential rare, threatened, and endangered plant communities and animal occurrences along the proposed transmission line corridors, and will continue such consultations to ensure that potential effects on sensitive biological resources during and after construction are avoided and minimized to the maximum extent practicable.

Procedures that will also be utilized to further reduce environmental impacts during construction include implementation of CMP's Environmental Guidelines (See Section 14 Basic Standards of the Site Law Application), preconstruction wildlife surveys, possible time of year restrictions, and utilization of third-party inspectors and environmental inspectors during construction. CMP has also developed an NECEC-specific Vegetation Clearing Plan (See Section 10 Buffers of the Site Law Application).

2.4.1 LUPC Site Specific Alternative Analysis

CMP evaluated alternatives where impacts to LUPC subdistricts requiring special exception approval could not be avoided. A description of these subdistricts and a discussion of the alternatives evaluated is provided in the LUPC Certification section (**Section 25**) of the Site Law Application and in addition, is provided below.

2.4.1.1 Beattie Pond

The Project corridor crosses the P-RR subdistrict associated with Beattie Pond, which is classified as a Management Class VI Lake, also referred to as a Remote Pond (**Figure 2-4**). The criteria to be designated Management Class 6 includes:

- a. Having no existing road access by two-wheel drive motor vehicles during summer months within 1/2 mile of the normal high-water mark of the water body;
- b. Having existing buildings within 1/2 mile of the normal high-water mark of the water body limited to no more than one non-commercial remote camp and its accessory structures; and
- c. Supporting cold water game fisheries.

The P-RR subdistrict associated with Beattie Pond encompasses a ½ mile buffer from the normal high-water mark of the waterbody. Portions of the P-RR subdistrict are located in Beattie Twp, Lowelltown Twp, Skinner Twp, and Merrill Strip Twp. Of note, there is an existing, gated road access by two-wheel drive motor vehicles within 400 feet of the pond, available during the summer months within the P-RR subdistrict and signage indicating that the single camp on the pond is accessible by club members only, both of which appear to be inconsistent with the above criteria for classification as a remote pond.

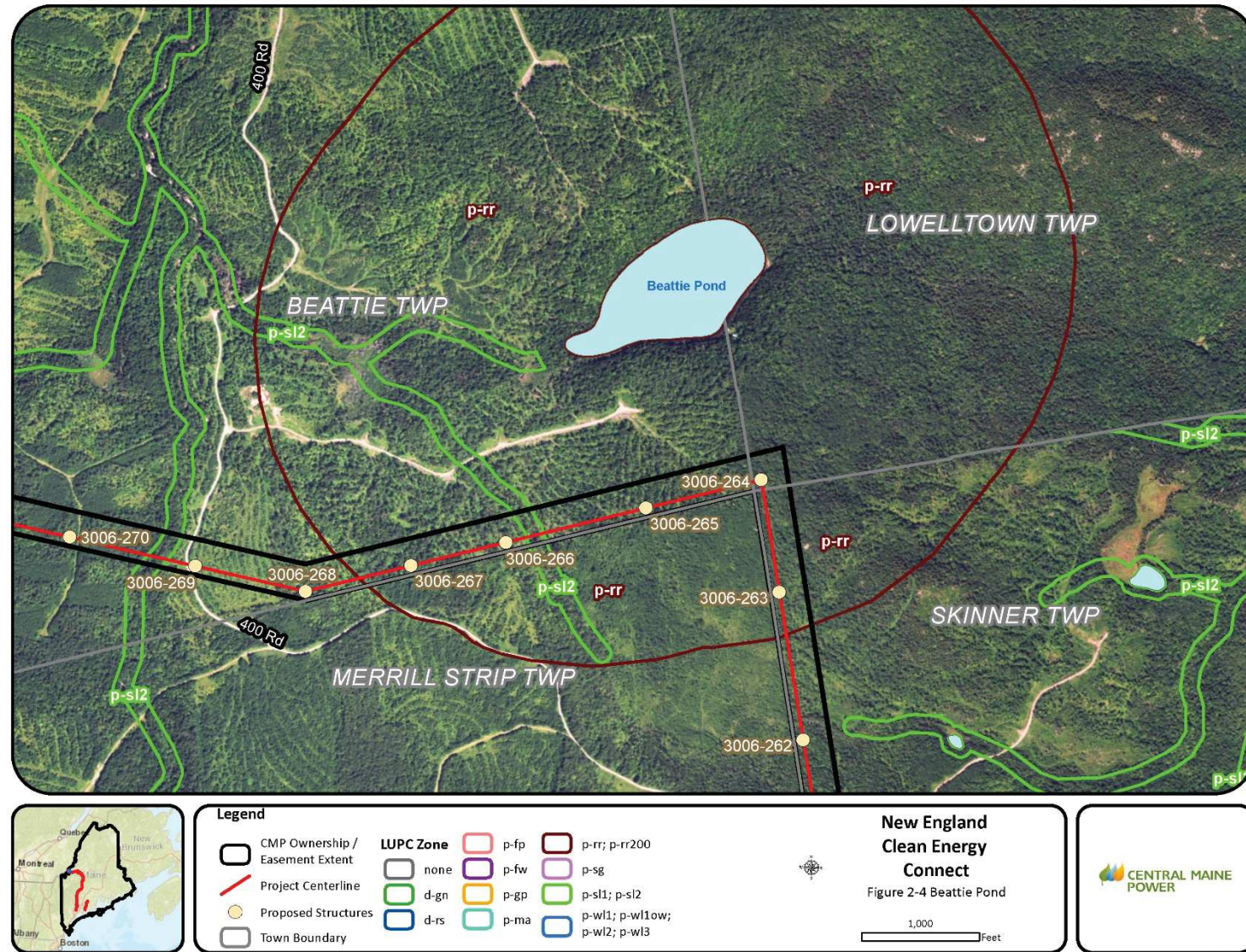
The project corridor is located within ¼-mile of the high-water mark of Beattie Pond but is located farther away from the pond than the existing road access. The P-RR zoning is intended to protect the pond from permanent improvements in access that could lead to more intensive use or development. The presence of a transmission line corridor at a distance greater than the existing developed road access will not include permanent improvements that promote more intensive use or development of the pond, and is therefore consistent with the intent of the P-RR zoning.

Views of the Project from Beattie Pond are limited to one transmission line structure which will be located approximately 1,300 feet from the pond. The majority of the structure will be buffered by existing vegetation such that only the tallest portion of the structure will be visible. The structure will be made of weathered steel, appearing rusty and brown, which will further reduce contrast in color with the surrounding vegetation when viewed from the pond.

CMP attempted to negotiate an alternative alignment south of the Beattie Pond P-RR subdistrict through Merrill Strip Twp, but was unable to come to mutually-acceptable terms with the landowner. Re-routing north of the pond to avoid the P-RR subdistrict would result in approximately two miles of additional corridor and associated vegetation clearing, and would lead to potentially higher visibility from the pond,

due to the higher elevations associated with Caswell Mountain. Neither alternative route is suitable for the proposed use, and reasonably available to CMP.

Figure 2-4: Beattie Pond



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2.4.1.2 Kennebec River Gorge

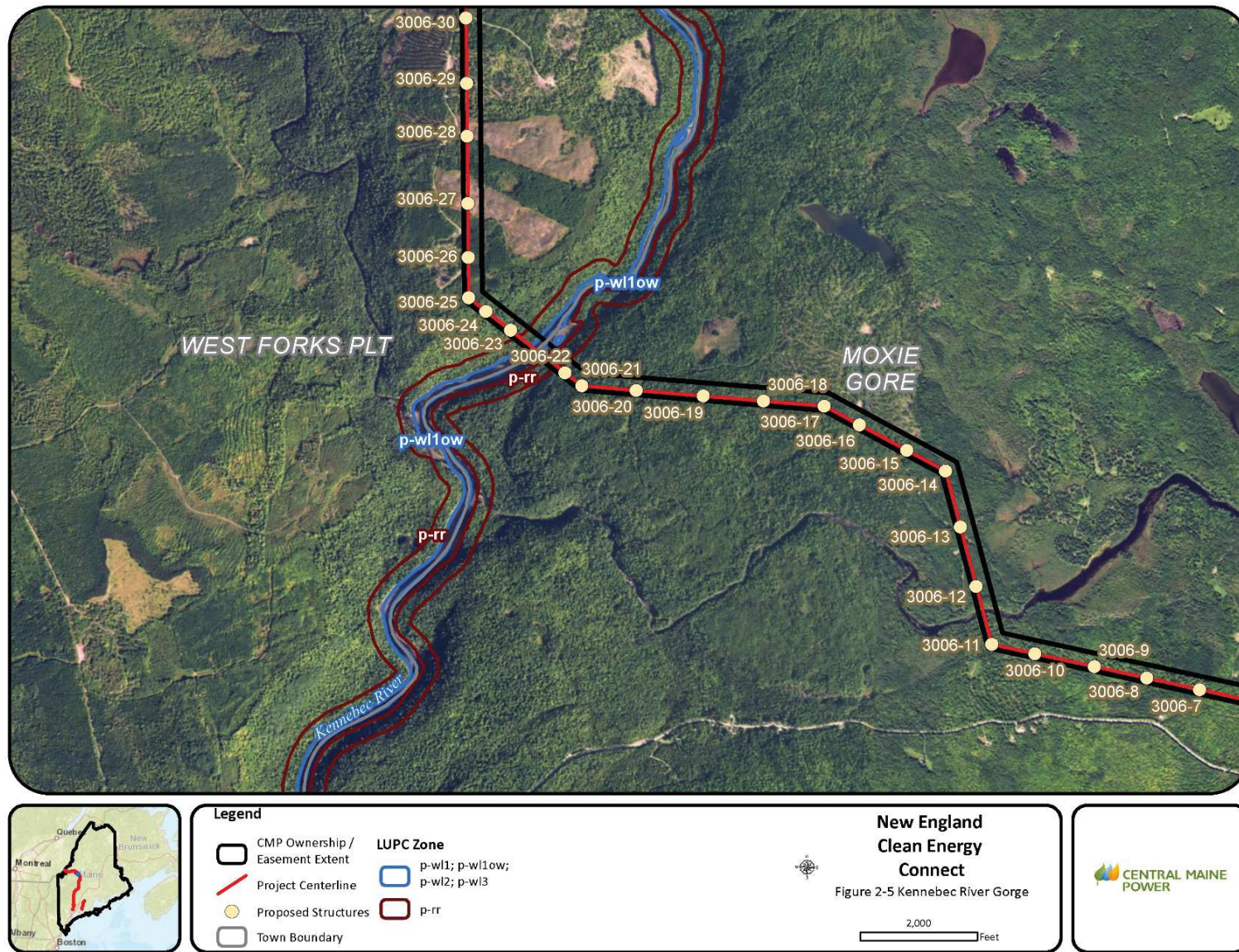
The Project corridor crosses the P-RR subdistrict associated with the Kennebec River Gorge in West Forks Plt and Moxie Gore (**Figure 2-5**). The P-RR subdistrict extends 250 feet from the normal high-water mark on both sides of the river. As stated previously, the P-RR subdistricts identified by the LUPC are those areas that provide or support unusually significant primitive recreation opportunities.

Whitewater rafting is the primary recreational use in this portion of the river. Notably, the Comprehensive Land Use Plan (LUPC 2010) identifies whitewater rafting as an intensive recreational use.

The project has been designed to minimize impact to the P-RR subdistrict at the gorge by positioning transmission line structures outside of the P-RR subdistrict. Additionally, if terrain conditions permit, trees will be allowed to grow within the P-RR subdistrict adjacent to the gorge in those areas where maximum tree heights are anticipated to remain below the conductor safety zone.

Views of the transmission line structures will be limited to the west side of the gorge, and overhead conductors will be visible to rafters passing through or stopping in this portion of the gorge. CMP will mitigate this visual impact by installing non-specular conductors, which reduce the reflection of light by the transmission line. Additionally, the mature capable tree species with a maximum height of 75' will be preserved within 200' +/- of the edge of the river to minimize views into the corridor from the river. The calculation to allow capable species to remain within the corridor on the edge of the river is based on conductor height and sag, required clearance from conductor to vegetation, topography between the river and each pole, and assumed maximum mature tree height of approximately 75 feet. Bird diverters will be installed on the overhead shield wires to deter avian collisions. Minimally-obtrusive bird diverters will be installed to lessen their visual impact.

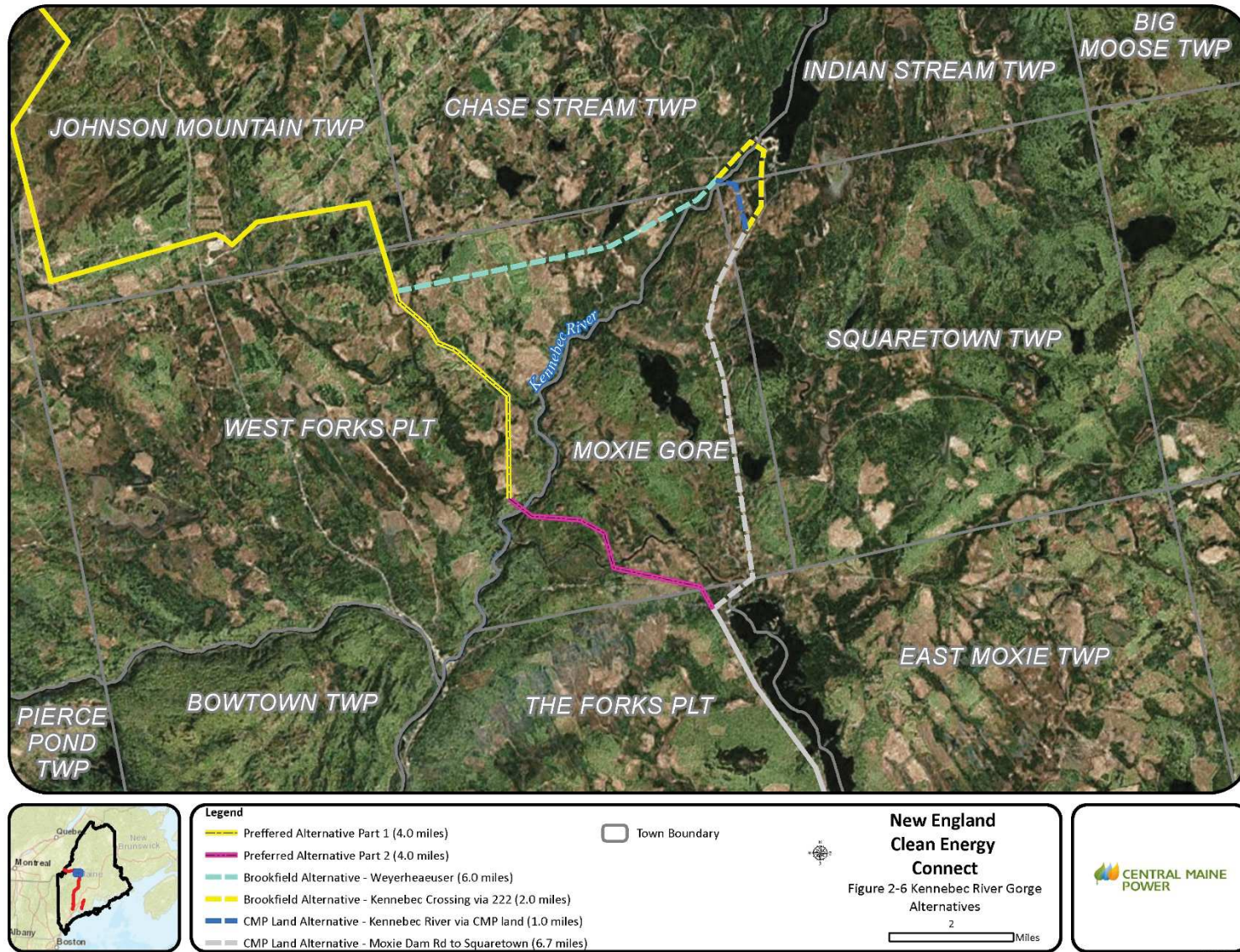
Figure 2-5: Kennebec River Gorge



2.4.1.2.1 Overhead Transmission Alternatives

There are three alternative locations for the proposed crossing of the Kennebec River (**Figure 2-6**): (1) a crossing north of Moxie Stream between Moxie Gore and West Forks Plt (the Preferred Alternative), (2) a crossing on CMP land about one mile downstream of Harris Dam (the CMP Land Alternative), and (3) a crossing near the Harris Station powerhouse (the Brookfield Alternative).

Figure 2-6: Kennebec River Gorge Alternative



CMP Land Alternative 13.3 miles

The CMP Land Alternative, represented by the white, blue and turquoise line shown on **Figure 2-6**, would follow the existing Section 222 corridor toward Harris Dam. The width of Section 222 decreases from 300 feet wide to 225 feet wide at Moxie Dam Road in The Forks Plt and maintains the 225-foot width north to the Harris Station powerhouse/substation located on Brookfield land at Harris Dam. Section 222 is an H-frame 115 kV line on the easterly half of the corridor. The corridor is owned in fee by CMP to the Harris Dam Hydropower Project (“Hydro Project”) line and the remaining distance of about one mile across the Hydro Project is held as an easement. For most of the 6.7 miles, the Section 222 corridor is bordered on the east by the Harris Dam Road and on the west by 40 acre recreational parcels created in a 1980s subdivision. Eight of the subdivision parcels are now subject to a conservation easement and approximately forty parcels remain in private ownership. Also subject to a conservation easement is the Weyerhaeuser Company land in Squaretown Twp, located southeasterly of Harris Dam Road (the Moosehead Region Conservation Easement) and the Hydro Project land located westerly of Section 222 in Squaretown Twp and Indian Stream Twp (i.e., the Moosehead Kennebec Headwaters conservation easement).

At the point at which the fee owned portion of Section 222 becomes easement, the CMP Land Alternative would be in new corridor, due west approximately 1 mile and across the upper gorge. CMP owns a 300 +/- acre parcel located between the Harris Dam Road and the Kennebec River in Squaretown Twp and Indian Stream Twp and an 85 +/- acre parcel on the northwesterly side of the Kennebec River in Chase Stream Twp (i.e., the blue-dashed line on **Figure 2-5**). CMP reserved the right to place transmission lines across the Kennebec River in this area when CMP placed a conservation easement on its Kennebec River Gorge properties as part of the Maine Power Reliability Program (MPRP) project compensation.

The Project route would then continue in new corridor approximately 5.6 miles long (i.e., the turquoise line on **Figure 2-5**). This land would need to be acquired from a private landowner in West Forks Plt, from the CMP ownership in Chase Stream Twp to where it meets the Preferred Alternative.

Brookfield Alternative 14.5 miles

The Brookfield Alternative is similar to the CMP Land Alternative with one exception. Instead of crossing the upper gorge across the MPRP conserved lands the route would cross the river at Harris Dam (see yellow dashed line on **Figure 2-5**). A transmission line crossing of the Kennebec River at Harris Dam requires the use of Section 222 within the Hydro Project. CMP reserved a 225-foot wide easement within the Project limits. However, unless the new line is to cross directly over the powerhouse, the transmission line crossing corridor will need to leave the Section 222 corridor south of the first angle point in Section 222. The river crossing would be about 1,200 feet and would require a 90° +/- angle

structure on the north side. A new corridor would need to be created on the northwesterly side of the Kennebec River between the river and the existing Jackman Tie Line (JTL) corridor. The JTL corridor will need to be widened by 200 feet for approximately $\frac{1}{4}$ mile until the JTL corridor leaves the Indian Pond Project and enters CMP land. About 900 feet of the JTL widening will involve Brookfield land that is encumbered by the Moosehead Kennebec Headwaters conservation easement. The use of this route depends on being able to widen the JTL corridor through the Moosehead Kennebec Headwaters conservation easement in addition to reaching an agreement with Brookfield and FERC on the other land that is inside the Hydro Project and outside the Section 222 easement. Although Section 222 connects to the Harris Substation from the south side of the river and the JTL connects from the north side, there is no transmission line that currently crosses the river in this location.

Greater environmental impacts, relative to transmission line length (i.e., the CMP Land and Brookfield Alternatives are 5.1 and 6.3 miles longer than the Preferred Alternative, respectively), would result from construction of either the CMP Land Alternative or the Brookfield Alternative. The addition of an HVDC transmission line along both alternatives would have a significant visual impact on recreational users of the upper Kennebec Gorge and Indian Pond area. The Brookfield Alternative would be visible to all rafters and private boaters putting into the Kennebec River and most likely would be directly over the stairway and marshalling area where rafters are given instructions before launching. Both alternatives would present similar perceived visual concerns as the Preferred Alternative and would cost approximately \$30 million dollars more than the Preferred Alternative.

2.4.1.2.2 Underground Transmission Alternative

CMP has also evaluated an underground alternative at the gorge crossing using horizontal directional drill (HDD) technology. HDD construction to cross the Kennebec River Gorge would cost approximately 8 times more than standard overhead construction and would require additional facilities, known as transition stations, to be located at the first angle in the corridor on either side of the river.

The transition stations would consist of structures that would transition the transmission line from an overhead to an underground configuration, and a control building within an approximately 2-acre fenced in yard with a stone covering. Additionally, permanent roads would need to be constructed to each of the transition stations. It is likely that the infrastructure for both transition stations would be hidden from view from the river due to topography and existing vegetation, however the contrast in vegetation from the removal of capable species would likely still be visible from the river.

CMP prefers the overhead transmission line crossing for several reasons. First, overhead transmission lines are easier to operate, inspect, and maintain than underground installations. In the event of a line outage, CMP can inspect, identify, and repair deficiencies on an overhead transmission line much more quickly than an underground line. Outages directly related to an underground transmission line are more difficult to repair. The installation of the underground option would likely require the installation of a backup circuit in the event the primary circuit failed. In addition to the technical difficulty of installing the transmission line underground and beneath the Kennebec River, the additional estimated cost is not financially practicable. The long-term operation and maintenance of the transition stations also presents additional cost to CMP. Thus, the underground alternative is not suitable to the proposed use and not reasonably available to the applicant, given that the preferred alternative can be sufficiently buffered from other uses in this location.

2.4.1.3 Appalachian Trail

The NECEC Project crosses the P-RR subdistrict in three locations at the Appalachian Trail adjacent to Moxie Pond and Trestle Road in Bald Mountain Twp in an existing CMP corridor containing a 115kV transmission line (**Figure 2-7**). The P-RR subdistrict in this location includes a 200-foot-wide strip centered over the Appalachian Trail. The configuration of the trail, within and adjacent to an approximately 3,500-foot long portion of transmission line corridor, prevented CMP from avoiding direct impacts to the subdistrict through the siting of the transmission line structures. As a result, one of five transmission line structures in this portion of the Project corridor is located within the P-RR subdistrict. Because the existing land use is transmission line corridor, there would be a negligible change in visual impact to hikers using the trail. Alternative alignments of the transmission line to meet the purpose and need of the Project would result in crossings of the Appalachian Trail in one or more locations where there are no existing transmission line corridors. Co-location of the transmission line within the existing transmission line corridor is therefore the least environmentally-damaging practicable alternative.

Figure 2-7: Appalachian Trail

